
मोर्स टेपर शैंक सहित चकिंग परिवेधक
रीमर — विशिष्टि
(दूसरा पुनरीक्षण)

**Machine Chucking Reamers with
Morse Taper Shank — Specification**
(*Second Revision*)

ICS 25.100.30

© BIS 2017



भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDARDS

मानक भवन, 9 बहादुरशाह ज़फर मार्ग, नई दिल्ली-110002
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI-110002

www.bis.org.in www.standardsbis.in

FOREWORD

This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Cutting Tools Sectional Committee had been approved by the Production and General Engineering Division Council.

This standard was first published in 1969 and revised in 1978. In this second version, besides other changes, the tolerances for the reamers have been specified separately for each diameter as per IS 919. The designation of the reamer has also been modified.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

MACHINE CHUCKING REAMERS WITH MORSE TAPER SHANK — SPECIFICATION

(*Second Revision*)

1 SCOPE

This standard covers the dimensions and requirements for machine chucking reamers with morse taper shanks.

2 REFERENCES

The following standards contain provisions, which, through reference in this text, constitute provision of this standard. At the time of publication, the edition indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent edition of the standards indicated below:

<i>IS No.</i>	<i>Title</i>
919 (Part 2) : 2014 /ISO 286-2 : 2010	Geometrical product specifications (GPS) — ISO code system for tolerances on linear sizes: Part 2 Tables of standard tolerance classes and limit deviations for holes and shafts (<i>second revision</i>)
1715 : 2002	Self-holding tapers — Dimensions (<i>third revision</i>)
5443 : 1994	High speed steel reamers — Technical supply conditions (<i>second revision</i>)
7778 (Part 2) : 2003	Small tools sampling inspection procedures: Part 2 Reamers (<i>first revision</i>)
10719 : 1983 /ISO 1302 : 1978	Method of indicating surface texture on technical drawings

3 DIMENSIONS

The dimensions of reamers with morse taper shanks shall be in accordance with Table 1.

4 TOLERANCES

Tolerances on cutting edge length 'l' and overall length 'L' shall be as given below:

<i>Cutting Edge Length and Overall Length</i>		<i>Tolerance</i>
Over	Up to and Including	
6	30	± 1.0
30	120	± 1.5
120	315	± 2.0
315	1 000	± 3.0

5 MATERIAL AND HARDNESS

Material and hardness of reamer shall be according to IS 5443.

6 GENERAL REQUIREMENTS**6.1 Bevel Lead Angle**

Bevel lead angle shall be 45°.

6.2 Back Taper

Back taper on the cutting diameter is recommended; when provided the amount of back taper shall be in accordance with 7.3 of IS 5443. Flutes unless otherwise specified shall be straight flutes for right hand cutting.

6.3 The tolerance on parallel shank diameter shall be 'h9' [see IS 919 (Part 2)].

6.4 The requirements not covered in this standard shall be according to the requirements as given in IS 5443.

7 SAMPLING

The sampling and criteria for acceptance shall be according to IS 7778 (Part 2).

8 DESIGNATION

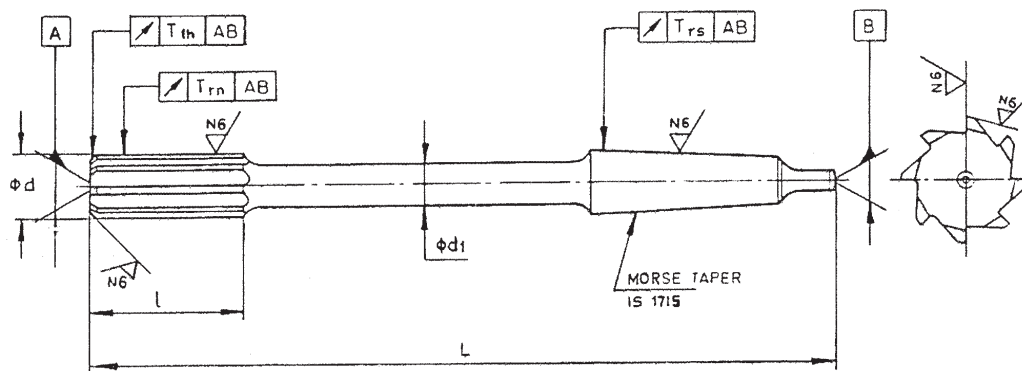
8.1 A machine chucking reamer with taper shank having diameter $d = 12$ mm, made from high speed steel, confirming to this standard and suitable for a hole with tolerance H8 [see IS 919 (Part 2)] shall be designated as:

Chucking Reamer 12.0 IS 5447

Table 1 Machine Chucking Reamers with Morse Taper Shank

(Clause 3)

N9/ (N6/)



All dimensions in millimeters

Reamer Diameter ¹⁾ d 'm6' ³⁾	Range of Dia.		d ₁ ²⁾	Cutting Edge Length l	Overall Length L	Morse Taper No. (See IS 1715)
	Over	Up to and Including				
(1)	(2)	(3)	(4)	(5)	(6)	(7)
5.5	5.30	6.00	5.0	26	138	1
6.0						
—	6.00	6.70	—	28	144	1
7.0	6.70	7.50	6.5	31	150	1
8.0	7.50	8.50	7.2	33	156	1
9.0	8.50	9.50	8.0	36	162	1
10.0	9.50	10.60	8.8	38	168	1
11.0	10.60	11.80	9.80	41	175	1
12.0	11.80	13.20	11.0	44	182	1
13.0						
14.0	13.20	14.00	11.5	47	189	1
15.0	14.00	15.00	13.0	50	204	2
16.0	15.00	16.00	14.0	52	210	2
17.0	16.00	17.00		54	214	2
18.0	17.00	18.00	15.5	56	219	2
19.0	18.00	19.00		58	223	2
20.0	19.00	20.00	17.5	60	228	2
—	20.00	21.20	—	62	232	2
22.0	21.20	22.40	17.5	64	237	2
—	22.40	23.02	—	66	241	2
—	23.02	23.60	—	66	264	3
24.0	23.60	25.00	21.5	68	268	3
25.0						
26.0	25.00	26.50	23.0	70	273	3
28.0	26.50	28.00		71	277	3
30.0	28.00	30.00	—	73	281	3
—	30.00	31.50		75	285	3
—	31.50	31.75	—	77	290	3
32.0	31.75	33.50	28	77	317	4
34.0	33.50	35.50	30	78	321	4
35.0				78	321	4
36.0	35.50	37.50		79	325	4
38.0	37.50	40.00		81	329	4
40.0				82	333	4
42.0	40.00	42.50		83	336	4
44.0	42.50	45.00		—	—	—
45.0				84	340	4
46.0	45.00	47.50		86	344	4
48.0	47.50	50.00				
50.0						

¹⁾ The cutting diameter is measured immediately behind the bevel lead.²⁾ The value of d₁ are given for guidance only, but neck diameter d₁ shall be always be less than cutting edge diameter d.³⁾ See IS 919 (Part 2)

NOTE — See IS 10719 for surface texture symbol indications.

8.2 When the reamer is required for a hole with tolerance other than H8, an appropriate hole tolerance shall be included in the designation after size.

9 MARKING

9.1 Machine chucking reamers shall be marked as per IS 5443.

9.2 BIS Certification Marking

The machine chucking reamers with taper shanks may

also be marked with the Standard Mark.

9.2.1 The use of the Standard Mark is governed by the provisions of *Bureau of Indian Standards Act*, 1986 and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

Bureau of Indian Standards

BIS is a statutory institution established under the *Bureau of Indian Standards Act*, 1986 to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

Copyright

BIS has the copyright of all its publications. No part of these publications may be reproduced in any form without the prior permission in writing of BIS. This does not preclude the free use, in the course of implementing the standard, of necessary details, such as symbols and sizes, type or grade designations. Enquiries relating to copyright be addressed to the Director (Publications), BIS.

Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of 'BIS Catalogue' and 'Standards : Monthly Additions'.

This Indian Standard has been developed from Doc No.: PGD 32 (1347).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

BUREAU OF INDIAN STANDARDS

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002

Telephones : 2323 0131, 2323 3375, 2323 9402

Website: www.bis.org.in

Regional Offices:

Telephones

Central : Manak Bhavan, 9 Bahadur Shah Zafar Marg
NEW DELHI 110002

{ 2323 7617
2323 3841

Eastern : 1/14 C.I.T. Scheme VII M, V. I. P. Road, Kankurgachi
KOLKATA 700054

{ 2337 8499, 2337 8561
2337 8626, 2337 9120

Northern : Plot No. 4-A, Sector 27-B, Madhya Marg, CHANDIGARH 160019

{ 26 50206
265 0290

Southern : C.I.T. Campus, IV Cross Road, CHENNAI 600113

{ 2254 1216, 2254 1442
2254 2519, 2254 2315

Western : Manakalaya, E9 MIDC, Marol, Andheri (East)
MUMBAI 400093

{ 2832 9295, 2832 7858
2832 7891, 2832 7892

Branches: AHMEDABAD. BENGALURU. BHOPAL. BHUBANESHWAR. COIMBATORE.
DEHRADUN. DURGAPUR. FARIDABAD. GHAZIABAD. GUWAHATI.
HYDERABAD. JAIPUR. JAMSHEDPUR. KOCHI. LUCKNOW. NAGPUR.
PARWANOO. PATNA. PUNE. RAIPUR. RAJKOT. VISAKHAPATNAM.

Published by BIS, New Delhi